

Remarks

Claim 1 has been amended to clarify that the knowledge domain classification step in the inventive method applies the specific domains known to those of skill in the art as procedural knowledge and declarative knowledge. These domains are understood by those of skill in the art to comprise two of the three knowledge domains described in the writings of Robert Marzano and others. Support for the addition to the claim is found in the specification at ¶¶ 24-51 and 73-78.

Claim 1 has further been amended to clarify that the brain processing function classification step applies the brain processing function classification known to those of skill in the art as the self system, the metacognitive system and the cognitive system, a taxonomy expounded in the works of Marzano and others. Support for this addition to the claim is found in the specification at ¶¶ 52-67 and 79-99.

Claim 1 has further been amended to add the step of classifying the available instructional strategies by knowledge domain and brain processing function as a precursor to matching instructional strategies to content or knowledge to be learned. Support is found in ¶¶ 101-02 and 153-54.

Claim 6 has been added as a dependent claim to add subcategories to the step of classifying items of knowledge according to brain processing function. The subcategories are all parts of the cognitive system, as known in the art and explained in the specification at ¶¶ 89-99. Support for the amendment is found at ¶¶ 55 and 89-99. Claims 7-9 are the same as former Claims 3-5, but rewritten to depend from new Claim 6.

35 U.S.C. §101

The Examiner has rejected Claims 1-4 as being directed to an abstract idea not resulting in a concrete, useful and tangible product. Applicant respectfully submits that the claims, as amended, form the basis of statutory subject matter. The technological art is education and the effective delivery of learning. The invention is a method, comprising a series of specific, concrete steps leading to a database of instructional strategies aligned specifically to maximize the learning of an identified set of content or testable educational benchmarks.

As illustrated in the specification, educators in the public school arena face a detailed array of content-specific benchmarks for imparting items of knowledge to their students. One standard set adopted by many states, the McREL standards, invokes hundreds of benchmarks across the entire spectrum of K-12 education. Finding ways to teach students to meet the benchmarks falls on school districts, curriculum developers and teachers. Applicant's method is a valuable tool to do that.

Educational standards and benchmarks can be resolved into particular, useful information processing classifications that identify how content is implanted into memory. Also using Applicant's method, the universe of available instructional strategies, running into the thousands in some cases, is classified by knowledge domain and brain processing function. When the process is complete, the educator has a concrete result: a list of known instructional strategies that will most effectively impart the desired content into a learner's brain. This is a "useful, concrete and tangible result" that is sufficient to constitute statutory subject matter. See In Re Musgrave, 432 F.2d 882, 893 (CCPA 1970) Cf., Ex Parte Banks, App. No. 1999-1932 (B.P.A.I. April 29, 2002) (unpublished) described in I. Donner, Patent Prosecution, 2004 Cum. Case Digest at 58-59 [enclosed].

The method is not limited to the alignment of national educational standards with the universe of instructional strategies available to K-12 teachers. More focused education objectives, like operating a nuclear power plant or understanding workplace discrimination issues, may also be addressed. Once the training objectives are established, the classification of knowledge domain and brain processing function may be undertaken, followed by classification of available instructional strategies and alignment of content with strategy.

35 U.S.C. §102

Claim 1 stands rejected under 35 U.S.C. § 102(b) as anticipated by Siefert. Applicant submits that Claim 1, as amended, is not so anticipated.

The Examiner directs Applicant to Siefert, Col. 3, lines 32-45, which discloses educational programs that present a lesson in different ways, based on educational characteristics of individual students. The Examiner further points to Col. 7, line 46-Col. 8, line 2, where

Siefert discloses preferred teaching strategies, with an example using the Suzuki method of teaching piano in contrast with another method, based on student preference. The Examiner also points to Col. 12, lines 29-56, which is also directed to student preferences in learning, and whether a student prefers to use particular thought processes.

Siefert discloses maintaining an inventory of educational programs that present a given lesson in different ways [Col. 3, lines 33-36]. The concept is elucidated by an example contrasting the Suzuki music teaching method with a traditional method [Col. 7, lines 46-64]. Finally, Siefert discusses the use in learning of inductive vs. deductive reasoning and left brain skills vs. right brain skills [Col. 12, lines 29-56].

Siefert thus teaches identifying the learning style that best suits the student for a particular lesson and delivering the lesson in that style. Identification of preferred style is accomplished by observing the effectiveness of different styles on the student's performance and optionally by polling the student [Col. 10, line 59-Col. 11, line 6]. Whatever the merits of the Siefert methodology, it is far different from Applicant's method.

Applicant's method is based on research demonstrating that increase in knowledge, the implanting of information in the brain for later retrieval, is functionally related to knowledge domain and implementation of the self, metacognitive and cognitive brain processing functions. Studies known to those in the art show that these are inherent in the brain and not matters of individual preference or choice. Persons skilled in the art recognize the terminology of the claims (i.e., knowledge domain, procedural knowledge, declarative knowledge, brain processing function) as carrying specific meanings in accordance with the writings of Marzano and others.

Applicant's method classifies identified items of learning in accordance with the specific knowledge domain and brain processing categories. The same is also done to an available universe of instructional strategies, by classifying these strategies according to the knowledge domain and brain processing categories addressed. Instructional strategies are then matched or aligned to the learning objectives accordingly, to embed content into long-term memory. Siefert does not disclose use of knowledge domains or brain processing functions, nor does it discuss classifying the matters to be learned. Siefert does not discuss classifying the instruction

strategies by knowledge domain and brain processing function either. Thus, the method steps of Applicant's invention do not appear at all in Siefert.

35 U.S.C. §103(a)

Original Claims 2-4 (now Claims 7-9) stand rejected as unpatentable over Siefert in view of Elzinga et al. This rejection assumed that Claim 1 was anticipated by Siefert and that Elzinga disclosed elements of Claims 2-4 (ranking strategies according to effect size) not disclosed in Siefert. As noted above, amended Claim 1 is not anticipated by Siefert. Elzinga's discussion of effect size does not supply missing limitations relating to classification of content and separate classification of instructional strategies by knowledge domain and brain processing function. Consequently, the combination of Siefert and Elzinga does not render any claim obvious.

In view of the foregoing, Applicant respectfully requests that Examiner withdraw the rejections, and a Timely Notice of allowance be issued in this case.

Respectfully submitted,

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